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Abstract

CENTRALE NUCLEAIRE DES ARDENNES
SPECIAL FEATURES AND IMPROVEMENTS COMPARED TO SIMILAR EXISTING PLANTS

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The "Société d'Energie Nucléaire franco-belge des Ardennes, S.E.N.A.", formed by "Electricité de France" on one side and the Belgian company "Centre & Sud" on the other, are presently building at Chooz, a village located 5 km from Givet, a large nuclear power plant. This plant is being built within the scope of an association contract with Euratom.

The power plant will be equipped with a PWR reactor of the "new generation type", feeding a single turbo-generator unit having a net electrical capacity of 266 MWe.

This reactor differs from its predecessors by a certain number of special features. Some of them are typical of the "new generation". They are essentially :

- chemical control,
- fuel bearing control rod followers,
- three regions core operation.

The other features are typical to the Centrale Nucléaire des Ardennes. They include mainly :

- the installation of the plant in a cavern inside the mountain,
- the construction of the equipment by French and Belgian manufacturers with the exception of the fuel core elements and of the absorbing section of the control rods,
- flow mixing grids within the fuel elements,
- in-core instrumentation,
- partial automation of plant control,
- safety injection by gravity,
- fuel transfer between reactor and storage pit with a new device.

These special features are discussed in the paper which concludes by a brief analysis of the plant cost and its economic perspectives.

Attached to the paper is a summary of the principal characteristics and a report on its present state of construction.

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